

**DEPARTMENT OF TRANSPORTATION**

DIVISION OF ENGINEERING SERVICES

Office of Structural Materials

Quality Assurance and Source Inspection



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Contract #: 04-0120F4Cty: SF/ALA Rte: 80 PM: 13.2/13.9File #: 69.28**WELDING INSPECTION REPORT****Resident Engineer:**Siegenthaler, Peter**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-024087**Date Inspected:** 22-May-2011**Project Name:** SAS Superstructure**OSM Arrival Time:** 700**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1900**Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **Location:** Shanghai, China**CWI Name:** An Qing Xiang**CWI Present:** Yes No**Inspected CWI report:** Yes No N/A**Rod Oven in Use:** Yes No N/A**Electrode to specification:** Yes No N/A**Weld Procedures Followed:** Yes No N/A**Qualified Welders:** Yes No N/A**Verified Joint Fit-up:** Yes No N/A**Approved Drawings:** Yes No N/A**Approved WPS:** Yes No N/A**Delayed / Cancelled:** Yes No N/A**Bridge No:** 34-0006**Component:** OBG**Summary of Items Observed:**

On this day CALTRANS OSM Quality Assurance (QA) Inspector Umesh Gaikwad was present during the times noted above for observations relative to the fabrication of the Self-Anchored Suspension (SAS) Superstructure being performed by Zhenhua Port Machinery Company (ZPMC) at Changxing Island in Shanghai, China. QA observed and/or found the following:

TA YARD, OBG 13AW (NWIT # 09211)

This QA Inspector performed Ultrasonic Testing (UT) of approximately 10% of the area previously tested and accepted by ZPMC Quality Control personnel. This QA inspector generated UT report for this date. The members are identified as OBG Components. The weld designations reviewed are as follows.

SEG3013P-243, 238, 233, 213, 198, 193, 188, 179, 174, 169, 164, 157, 150, 228, 255, 248, 242, 237, 227, 252, 245, 239, 234, 229, 224, 217, 212, 207, 202, 197, 192, 187, 328, 178, 173, 168, 214, 209, 204, 199, 194, 189, 184, 180, 175, 170, 165, 272, 273, 274, 163, 156, 149, 158, 151

SEG3013P-219, 222 (VT Reject)

SEG3013P-203 (UT class "A" rejectable indication found during inspection)

This Quality Assurance (QA) Inspector observed the following work in progress:

TA YARD

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OBG Seg 14W:

The Shielded Metal Arc Welding (SMAW) process on weld joint no: SEG3020V-037/038 [Fillet weld at panel point (PP) 125]. The welder is identified as 046769 and was observed welding in 4F position. ZPMC QC was identified as Mr. Zhu Lin. The welding variables recorded by this QC appeared to comply with WPS: B-P-2114-FCM-1.

The SMAW process on weld joint no: SEG3020V-099 [Complete Joint Penetration (CJP) weld at PP125]. The welder is identified as 040611 and was observed welding in 4G position. ZPMC QC was identified as Mr. An Qing Xiang. The welding variables recorded by this QC appeared to comply with WPS: B-P-2214-Tc-U4b-FCM-1.

Repair welding of weld joint no: SEG3020U-591[CJP weld at PP 126]. The welder is identified as 066361 and was observed welding in the 4G position. Welding process was identified as SMAW. ZPMC QC was identified as Mr. An Qing Xiang. The welding variables recorded by this QC appeared to comply with WPS: 345-SMAW-4G(4F)-FCM-Repair-1. Repair welding was done as per Critical Welding Repair (CWR) Report: B-CWR 2943 Rev-0.

The SMAW process on weld joint no: SA3409-001-074 [Fillet weld at PP 127.3]. The welder is identified as 050038 and was observed welding in 4F position. ZPMC QC was identified as Mr. Zhu Lin. The welding variables recorded by this QC appeared to comply with WPS: B-P-2114-FCM-1.

During the Quality Assurance (QA) Ultrasonic Testing (UT) verification of welds located on OBG segment 13AW, this QA Inspector discovered the following issues:

### Issue #1: Incomplete Welds/ Missed VT

- UT inspection request was issued to CT on welds that ZPMC have not welded after back gouging
- Supposedly, these welds were 100% inspected by ZPMC in UT and VT. The welds of concern are listed below.
- SEG3013P-219 (joining WT stiffener RS3430B to plate stiffener RS3431B on SP 3099A); as per drawing, complete joint penetration (CJP) weld is required.
- SEG3013P-222 (joining plate stiffener RS3431B on SP 3099A to FB 3176A at PP 118); as per drawing, complete joint penetration (CJP) + 6mm fillet weld is required.
- Material thickness is 25mm x 10mm.

### Issue #2: Missed indication

- One Class "A" longitudinal indication measuring approximately 15 mm in length.
- The depth of the indication is 19mm from face A.
- The db rating is +5.
- The material thickness is 25mm.
- The weld is identified as: SEG3013P-203.
- The Weld is a Complete Joint Penetration (CJP), Tee-joint, joining the plate stiffener RS3433D on side panel (SP3099A) to floor beam (FB 3176A) at Panel point (PP) 118.
- The "Y" location of the indication is 60mm from the free edge of the stiffener (as shown in attached photograph).
- The indication is clearly marked on the component.

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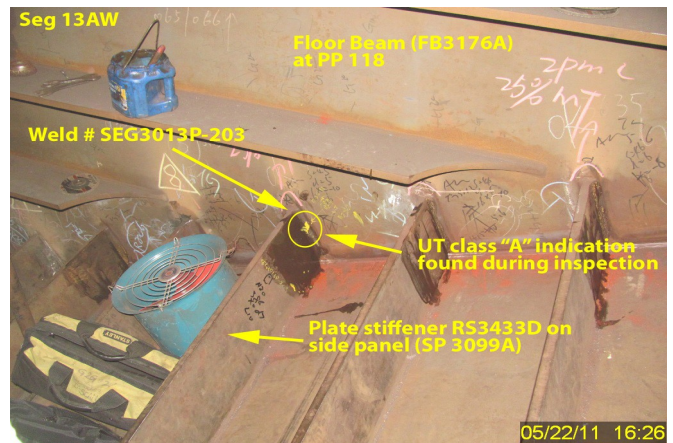
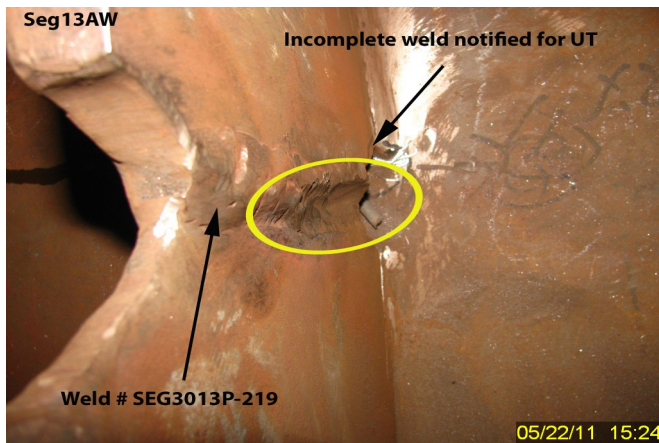
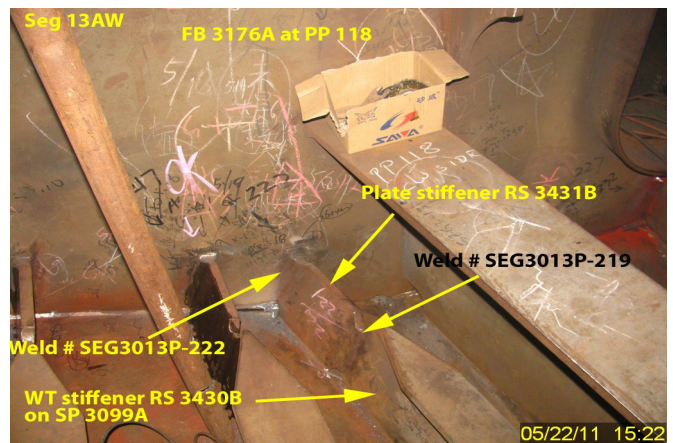
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-The 13AW is located in Trial Assembly Yard.

The Notice of Witness Inspection Number (NWIT) is 09211. The indication is located inside the area that has been previously tested and accepted by ZPMC Quality Control (QC) personnel. As per the contract documents, ZPMC's QC personnel are required to perform 100% UT inspection of these welds. Attached photographs provide additional location details.

An Incident Report was generated for this issues on this date.

Unless otherwise noted, all work observed on this date appeared to generally comply with applicable contract documents.



## Summary of Conversations:

Only general conversation was held between QA and QC concerning this project.

## Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Eric Tsang : 15000422372, who represents the Office of Structural Materials for your project.

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**Inspected By:** Gaikwad,Umesh

Quality Assurance Inspector

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**Reviewed By:** Peterson,Art

QA Reviewer